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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,822	04/20/2006	Roy H Hammerstedt	6077-052204	8352

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EXAMINER

BASS, DIRK R

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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03/16/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/542,822	Applicant(s) HAMMERSTEDT ET AL.	
	Examiner DIRK BASS	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's request for continued examination filed March 5, 2010 is acknowledged. Claim 1 is amended and claims 7-24 are cancelled. Claims 1-6 are pending and further considered on the merits.

Response to Amendment

In light of applicant's amendment, the examiner modifies the grounds of rejection set forth in the office action dated October 7, 2009.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. **Claims 1-4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Doktycz et al., USPA 2004/0173506 (Doktycz) in view of Allcock et al., USPA 2002/0088748 (Allcock).
3. Regarding claims 1-4, Doktycz discloses a method of altering fiber surfaces within a channel of a nano-engineered membrane, wherein endogenous carboxyl groups are used for chemical derivatization of said channel via activation with a coupling agent such as carbodiimide (abstract and ¶ 0047).
4. Doktycz fails to disclose a method wherein the alteration takes place in capillary pore membranes. However, Allcock discloses that capillary pore membranes produced via track-etching techniques create carboxyl functionalities within the pores and that in altering said pores, tunnels within the capillary pore membranes are "well suited to promote attachment of such chemically active and/or ionic groups" (¶ 0011).
5. At the time of invention, it would have been obvious to modify the method of Doktycz using the passageways of the capillary pore membranes of Allcock since all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

6. **Claims 5-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Doktycz in view of Allcock as applied to claims 1-2, and in further view of Takenishi et al., US 6017742 (Takenishi) (already of record).
7. Regarding claim 5, Doktycz in view of Allcock fail to disclose a method wherein a carbodiimide reaction is used to accomplish said alteration of said membrane by linkage of a molecule, particle, or unit of matter containing an amine group or thiol group with said endogenous carboxyl groups.
8. Takenishi discloses utilizing carbodiimide derivatives to perform a condensation reaction between carboxylic acid and an amine group or thiol group (col. 5, l. 8-11) to immobilize biologically active substances (see abstract).
9. At the time of the invention, it would have been obvious to one skilled in the art to combine the carbodiimide reaction of Takenishi with the method of Doktycz in view of Allcock in order to immobilize biologically active substances utilized for further separation or analysis techniques.
10. Regarding claim 6, Doktycz in view of Allcock fail to disclose a method wherein the endogenous carboxyl groups are reacted to form anhydrides.
11. Takenishi discloses carboxyl groups being reacted to form anhydrides (col. 2, l. 64-66) to immobilize biologically active substances (see abstract).
12. At the time of the invention, it would have been obvious to one skilled in the art to combine the formation of anhydrides step of Takenishi with the method of Doktycz in view of Allcock in order to immobilize biologically active substances utilized for further separation or analysis techniques.

Response to Arguments

13. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIRK BASS whose telephone number is (571) 270-7370. The examiner can normally be reached on Mon - Fri (9am-4pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DRB/
Dirk R. Bass

***/Angela Ortiz/
Supervisory Patent Examiner, Art Unit 1797***